

IN THE SPECIFICATION:

Please amend the specification as follows:

On page 3, lines 28-30, please replace with the following paragraph:

Figures 5A to ~~5C~~and 5B show the mating interface between disc top endplate with an upper vertebral body fixation element according to an embodiment of the subject invention.

On page 12, line 7 through page 13, line 18, please replace with the following paragraphs:

One representative non-integrated vertebral body fixation element according to this embodiment is shown in Figures 5A to ~~5C~~and 5B. Figure 5A provides a representation of the upper plate 50 of a prosthetic disc mated with a vertebral body fixation element 51, as the structures would appear upon implantation. Vertebral body fixation element 51 is a horseshoe shaped structure having spikes 55 at locations corresponding to the cortical bone of vertebrae and porous coating to enhance bone fixation. The fixation element 51 also has gear teeth 52 such that corresponding gear teeth 53 of the disc upperplate 50 can slide through the gear contact resulting in the right location of prosthetic disc with respect to the fixation element. The gear teeth have a shape such that only inward movement of the upper plate upon implantation is possible. Also present are slots 56 in the spiked fixation elements next to the gear teeth that provide for the elastic deformation of the whole teeth area upon implantation and desirable clearance between mating gear teeth of the disc and fixation element so that incoming gear teeth of the disc can easily slide into the fixation element.

In the embodiment shown in Figure 5A, as the disc is pushed into the fixation element, the protruded rail 57 on the disc slides along the corresponding concave rail-way 58 on the fixation element until the protruded rail on the most front side is pushed into the corresponding concave rail-way on the fixation element, as shown in Figure ~~5C~~B. This rail interface is devised to prevent the

upward/downward movement of the top disc endplate and the bottom disc endplate with respect to the corresponding fixation element. This interface between the fixation elements and the top and bottom endplates of the disc enables an easy surgical operation. Specifically, the fixation elements are transferred together to the disc replacement area (disc void space) with an instrument and pushed in the opposite directions toward the vertebrae until they are fixed to the vertebrae, and then the prosthetic disc is transferred by the instrument between the fixation elements and simply pushed inward until the stoppers mate the corresponding stoppers. The prosthetic disc can also be easily removed after long-term use. For its removal, the gear teeth on the fixation element are pushed to reduce the gap of the slot so that the gear engagement between the disc endplate and the fixation element is released.

An alternative embodiment is depicted in Figures 6A and 6B. In the embodiment shown in Figures 6A and 6B, the fixation element 61 and the endplate 62 have a different mating interface from that depicted in Figures 5A ~~to~~ and Figure 5C ~~B~~. As shown in Figures 6A and 6B, the gear teeth in the endplate are brought in contact with the corresponding gear teeth of the clamping element 63 that is attached to the fixation element 61 through a spring 64. In this mechanism, the slots next to the gear teeth shown in the embodiment depicted in Figures 5A ~~to~~ and Figure 5C ~~B~~ are replaced by a spring attached to the fixation element and this spring deformation provides the necessary recess of the clamping element as the disc endplate is pushed in upon implantation. The gear teeth contact between the endplate and the clamping element allows one way sliding. The disc endplates and the fixation elements have the rail interface in Figures 5A ~~to~~ and Figure 5C ~~B~~ to prevent the vertical movement.